REMARKS

This Amendment is responsive to the Office Action dated January 16, 2004. All rejections and objections of the Examiner are respectfully traversed. Reconsideration and further examination is respectfully requested.

The Examiner initially rejected claims 1, 3, 5, 6, 7, 8, 9, 12, 18, 19, 20 and 24 under 35 U.S.C. 102(e) citing United States patent number 6,628,649 of Raj et al. ("Raj et al."). Applicants respectfully traverse this rejection.

Raj et al. disclose a system for providing routing redundancy in a data switch configured to use label switching, in which multiple route controllers referred to as label switch controllers (LSCs) operate concurrently but independently of each other to provide routes through a data switching mechanism to which they are coupled. Similarly configured LSCs in the Raj et al. system each concurrently support a route for data (e.g., labeled ATM cells) within the data switching mechanism in parallel, providing the ability to support redundant and multiple parallel data networks. Upon an LSC failure, switch resources such as bandwidth that were used by the failed LSC are made available by Raj et al. to the remaining non-failed LSCs.

Raj et al. specifically teach that multiple label switch controllers (LSCs) ***independently and concurrently control partitions of resources within the same data switch at the same time.*** Within a single device combining LSCs and a switching mechanism, as described by Raj et al., there need not be ***any relationship between the two (or more) redundant LSCs, nor need there be knowledge or sharing of each others existence, state, connections or operation information once configured***. Each LSC controls a partition of the switch resources to support a unique, but

parallel route, in relation to the other LSCs coupled to the same switch. See column 8 lines 43-56 of Raj et al.

Nowhere in Raj et al. is there disclosed or suggested any communications device including:

> a communication fabric;
> a plurality of active line cards connected to said communication fabric;
> a protection line card connected to said communication fabric and configured with outbound path tables ***for use in conjunction with traffic from said communication fabric bound for a router port***, said outbound path tables being clones of outbound path tables in one of said active line cards; and
> a data forwarding module in each of said active cards ***operative to respond to externally received messages bound for said one of said active line cards by directing such externally received messages through said communication fabric to said protection line card as well as to said one of said active line cards***. (emphasis added)

As in the present independent claim 1 (independent claims 5, 9, 12 and 18 include analogous features). In contrast, Raj et al. describe a system in which routes are advertised that pass through partitions of label switch routers (LSRs), where the partitions are independently controlled by the associated LSCs. Raj et al. includes no disclosure or suggestion of any line card that forwards a received message that is bound for another line card (the active line card), through a communication fabric within the receiving device, to both the line card the received message is bound for, and to a second destination line card (the protection line card), as in the present independent claims 1, 5, 9, 12 and 18. In particular, Applicants wish to point out that the LSCs of Raj et al. operate independently, and that messages are not conveyed between LSCs within an LSR, even less from one LSC to multiple destination LSCs. The LSCs operate to control partitioned resources within the LSRs of Raj et al., so that rerouting can be quickly and conveniently performed in the even of a failure, and so that resources can be reallocated to

functioning LSCs when there is a failure. Data units processed in a Raj et al. LSR do not cross partition boundaries. For example, Raj et al. state as follows with regard to such parallel partition operation in column 10, beginning at line 24:

> The first and second switched connections handle data transfers concurrently according to a multipath routing protocol that distributes data between the first and second routes, such that the first and second switch control mechanisms support routes for distinct parallel networks that operate to transfer data concurrently through the data communications device.

Thus we see that Raj et al. are providing end-to-end parallel routes, as opposed to the conveyance of individual received messages to active and protection line cards, as in the present independent claims. Accordingly, the unipath and multipath routing techniques used in Raj et al. are performed at the LER (Label Edge Router). In this regard, Raj et al. teach the following with respect to Fig. 14B, beginning at line 56 of column 28:

> . . . When LSC 201-1 fails, the data network 230-1 is no longer fully supported. Upon such a failure, the system of the invention allows the network 230-2 supported by LSC 201-2 to handle the IP data formerly carried by network 230-1. ***To enable this to happen, the LERs 210, 211 (one or the other or both) will detect the failure of LSC 201-1 to participate in the routing and label distribution protocols.*** In response, they will deduce that data transfer on the route supported by LSC 201-2 is no longer reliable. Alternatively, other algorithms and/or techniques can be used to allow an LER 210, 211 to detect the inability of LSC 201-1 to properly route data. In any event, when an LER 210, 211 detects such a condition, ***it will inform other devices by routing protocols that the route/data link providing the path for network 230-1 previously supported through the LSC 201-1 is no longer available.*** Depending on the routing protocol, the routing protocol might represent the failure of the links (i.e., of the routes to ports 225-0 through 225-3 of network 230-1) by increasing their weight or cost metric to infinity, for example, as illustrated in the FIG. 14B. Alternatively, the routing protocol can represent more directly that the links (e.g., 230-1-1) are no longer in existence or available for use. By way of example, OSPF can simply indicate that the links are not existent. (emphasis added)

As thus described, the Raj et al. system responds to a failure by performing ***re-routing*** without the failed device. This stands in contrast to the present invention as set forth in the independent claims, which may advantageously operate to forward received message to both the active and protection line cards in the event of a failure.

For the above reasons, Applicants respectfully urge that Raj et al. does not disclose or suggest all the features of the present invention as set forth in independent claims 1, 5, 9, 12, 18 and 24. Accordingly, Raj et al. does not anticipate the present independent claims 1, 5, 9, 12, 18 or 24 under 35 U.S.C. 102. As to claims 3, 6-8, 13-17, and 19-23, they each depend from independent claims 1, 5, 9, 12, 18 and 24, and are respectfully believed to be patentable over Raj et al. for at least the same reasons.

The Examiner also rejected claims 2, 4, 10 and 11 under 35 U.S.C. 103, again citing Raj et al., and additionally citing United States patent number 5,513,174 of Punj ("Punj"), and United States patent number 6,330,221 of Gomez ("Gomez"). Applicants respectfully traverse these rejections.

Punj discloses a telecommunication system that provides detection and control of packet collisions. In the Punj system, line cards provide input/output interfaces between synchronous communication channels and an asynchronous network, while determining the cumulative number of packet collisions that would occur at each output line card during a predetermined time frame. If the cumulative number of collisions exceeds a predetermined delay threshold, the number of packets actually transmitted to the Punj system is reduced preferably by denying service to new call origination requests. Punj also discusses packet ordering based on a schedule using time slots.

Gomez discloses a failure tolerant high density dial router that includes redundant subsystem resources that operate independently of telephone line interface connections. The redundant resources in the Gomez system are switched active when a failure is detected in an activated dial router subsystem. Gomez further describes a switching mechanism that selectively switches out the telephone interfaces or other subsystem resources inside the dial router box detected as having failures. The subsystem resources include line framers, controllers and modem modules.

Nowhere in the cited combinations of Raj et al. with Punj and Gomez is there disclosed or suggested any communications device including:

> a communication fabric;
> a plurality of active line cards connected to said communication fabric;
> a protection line card connected to said communication fabric and configured with outbound path tables ***for use in conjunction with traffic from said communication fabric bound for a router port***, said outbound path tables being clones of outbound path tables in one of said active line cards; and
> a data forwarding module in each of said active cards ***operative to respond to externally received messages bound for said one of said active line cards by directing such externally received messages through said communication fabric to said protection line card as well as to said one of said active line cards***. (emphasis added)

As in the present independent claim 1 (independent claim 9 includes analogous features). Neither Punj nor Gomez provide any hint or suggestion of even the desirability of the present independent claim features absent from Raj et al., as discussed above with regard to the rejection under 35 U.S.C. 102.

For the above reasons, Applicants respectfully urge that the cited combinations of Punj and Gomez with Raj et al. do not disclose or suggest all the features of the present invention as set forth in independent claims 1 and 9. Accordingly, the cited combinations of Punj and Gomez

with Raj et al. do not support a *prima facie* case of obviousness under 35 U.S.C. 103 with regard to independent claims 1 and 9. As claims 2, 4, 10 and 11 depend from claims 1 and 9, they are respectfully believed to be patentable over the cited combinations of Puni and Gomez with Raj et al. for at least the same reasons.

Reconsideration of all pending claims is respectfully requested. Applicants respectfully request that the Examiner's rejections be withdrawn in view of the above remarks and the current amendments to the claims.

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone the undersigned Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

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Date

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